

17. Contributions to a Study of the Dragonfly Fauna of Borneo.—Part IV. A List of Species known to occur in the Island. By F. F. LAIDLAW, M.A.(Cantab.), F.Z.S.

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I. *Introduction.*

I have attempted in the following list to catalogue all species of Dragonflies which have been recorded from Borneo, or which are otherwise known to me to occur in the island.

In the case of some species I have added notes that may, I hope, be of service to others who may deal with this fauna.

In addition to records already available in the literature of the order Odonata, I have been able to compile my list from the examination of the large amount of material sent me by Major J. C. Moulton whilst Curator of the Sarawak Museum. Some of this material has already been dealt with, as noted in the references to literature; and Major Moulton's type specimens are, unless otherwise noted, deposited in the British Museum. Where possible, paratypes have been sent to the Sarawak Museum.

I have also been able to examine a collection sent to me nearly twenty years ago by Dr. C. Hose from the Baram district.

References to specimens examined deal in every case with Major Moulton's material unless otherwise stated.

His localities are in the territory of Sarawak, with the following exceptions, which are in British North Borneo:—Mt. Kinabalu, Tampassuk (River), and Klotabelud.

In order to avoid undue prolixity in the list, I have given references chiefly, if not entirely, to faunistic and systematic papers. For the *Libellulinae* I have thought it necessary to quote only Dr. Ris's Monograph of the subfamily, referred to in the sequel as "Ris, Cat. Coll. Selys, Libell." ('Catalogue Systématique et Descript. Collections Zoologiques du Baron Edm. de Selys-Longchamps,' Fasc. ix.-xvi., Libellulinae). The publication of the Monograph was completed in 1919, and it contains a very full synonymy of all the Bornean species.

For the *Gomphinae* and *Chlorogomphinae* I give reference only to my previous paper on the group (these Proceedings, 1914, pp. 51-63, pl. i.), where citations of recent papers are to be found.

For species of other groups I quote, where available, Kirby's 'Synonymic Catalogue of Neuroptera Odonata' (1890) as "Kirby, Cat. Odonata," and, in addition, references to later papers. Of these, Fasc. xvii. of the 'Catalogue of Collections du Baron Edm. de Selys-Longchamps,' dealing with the Cordulinæ, by Martin, is referred to as "Martin, Cat. Coll. Selys, Cordul.;" whilst Fasc. xviii.-xx. of the same Catalogue, dealing with the *Æschminæ*, are referred to as "Martin, Cat. Coll. Selys, *Æschm.*"

I have in certain cases given measurements of the specimens noted, in each case of the abdomen "abd." and hinder-wing "h. w." In the case of the male, after the measurement of the abdomen, the sign + followed by another measurement refers to the length of the anal appendages.

Where the venation of the wings is discussed, I have used the revised nomenclature proposed by Tillyard in his book, 'The Biology of Dragonflies.'

An asterisk placed before the name of a species signifies that I have not seen a specimen of that species from Borneo.

Parentheses around the names of authors placed after specific names in this paper are used in accordance with Article 23 of the International Rules of Nomenclature (Proc. 7th Int. Cong. Boston, 1907, p. 44 (1912)).

II. List of Species.

ANISOPTERA.

ÆSCHNIDÆ.

CHLOROGOMPHINÆ.

1. OROGOMPHUS DYAK Laidlaw.

Orogomphus dyak Laidlaw, Proc. Zool. Soc. London, 1914, pp. 59-60, pl. i. figs. 4-7.

2 ♂♂, 2 ♀♀. Mt. Matang. 3 ♂♂. Mt. Merinjak, 2200 ft., 28. v. 14.

2. OROGOMPHUS SPLENDIDUS Selys.

Orogomphus splendidus Laidlaw, Proc. Zool. Soc. London, 1914, pp. 60-61, pl. i. fig. 8.

2 ♀♀. Sarawak.

ÆSCHMINÆ.

3. *LINÆSCHNA POLLI Martin.

Linæschna polli Martin, Cat. Coll. Selys, *Æschm.* pp. 136-137, (figs. 133, 134), pl. iii. fig. 9.

4. JAGORIA MODIGLIANII (Selys).

Oligoæschna modiglianii Kirby, Cat. Odonata, p. 86.

Dolieschna elacatura Needham, Bull. Amer. Mus. Nat. Hist. 23, p. 143, fig. 3.

? *Jagoria pœciloptera* (pars) Karsch, Entom. Nachr. xv. p. 239 (♂).

Jagoria elacatura Martin, Cat. Coll. Selys, Æschn. p. 135.

Jagoria modiglianii Krüger, Stettin. Entomol. Zeitg. 1898, pp. 238-259, 327; Martin, Cat. Coll. Selys, Æschn. p. 130 (figs. 126, 127); Ris, Ann. Soc. Entomol. Belg. pp. 240-242.

2 ♀ ♀. Matang Rd.

I have followed Ris in the synonymy of this species.

Wings suffused with golden brown throughout.

♀. Abd. 40 mm., h. w. 42 mm.

5. **JAGORIA PŒCILOPTERA* Karsch.

Jagoria pœciloptera Karsch, Entom. Nachr. xv. 1889, p. 238; Krüger, Stettin. Entomol. Zeitg. 1898, pp. 327-328; Martin, Cat. Coll. Selys, Æschn. pp. 132-133 (fig. 129).

6. **JAGORIA BUHRI* Förster.

Jagoria buhri Förster, Insecten-Börse, 1903; Martin, Cat. Coll. Selys, Æschn. pp. 131-132 (fig. 128).

This species recorded from N. Borneo by Dr. Förster appears to me to be very closely related to that immediately preceding it. I have not seen examples of either of these two last species.

7. *HELLESCHNA* *IDÆ* (Brauer).

Amphlieschna? *idæ* Kirby, Cat. Odonata, p. 93.

Helieschna idæ Krüger, Stettin. Entomol. Zeitg. 1898, pp. 323-324; Martin, Cat. Coll. Selys, Æschn. pp. 164-165 (fig. 166); Ris, Ann. Soc. Entomol. Belg. lv. 1911, pp. 242-243 (fig. 10).

1 ♂. Matang Rd., 2. ii. 11. 1 ♂. Kuching, 4. ii. 98. 1 ♂. Buntal, iii. 12. 1 ♀. Matang Rd., 4. i. 11. 1 ♀. Saribas, xi. 1900. 1 ♀. Kuching, iv. 03.

♂. Abd. 52 + 7 mm., h. w. 52 mm. ♀. Abd. 57 + mm., h. w. 53 mm.

The females each have four large spines on ventral plate, the median pair being larger than the lateral pair. The apex of the plate is strongly decurved, and the margin carries smaller spines on either side of the four larger ones. From the description and figures (Martin, *loc. cit.* figs. 163, 166) I cannot separate this species from the next.

8. **HELLESCHNA CRASSA* Krüger.

Helieschna crassa Krüger, Stettin. Entomol. Zeitg. 1898, pp. 324-325; Martin, Cat. Coll. Selys, Æschn. pp. 162-163 (fig. 163).

9. **HELIÆSCHNA UNINERVULATA* Martin.

Helieschna uninervulata Martin, Cat. Coll. Selys, *Æschn.* pp. 163-164 (figs. 165, 168).

This species, described originally from Borneo, occurs also in Lower Burma. (1 ♂, coll. E. B. Williamson.)

10. **HELIÆSCHNA SIMPLICIA* (Karsch).

Amphieschna simplicia Karsch, Ent. Nachr. xvii. 1891, p. 308; Karsch, Ent. Nachr. xviii. 1892, p. 250.

Helieschna simplicia Karsch, Ent. Nachr. xix. 1893, p. 195; Martin, Cat. Coll. Selys, *Æschn.* pp. 161-162 (fig. 162).

11. **AMPHIÆSCHNA PERAMPLA* Martin.

Amphieschna perampla Martin, Cat. Coll. Selys, *Æschn.* p. 115 (figs. 108, 109).

12. *AMPHIÆSCHNA GRUBAUERI* Förster.

Amphieschna grubaueri Förster, Insekten-Börse, xxi. (1904) pp. 1-3 (sep.); Martin, Cat. Coll. Selys, *Æschn.* pp. 115-116 (fig. 110); Laidlaw, Journ. Straits Branch R. Asiat. Soc. lxiii. 1912, p. 94.

1 ♀. Mt. Batu Lawi, 24. v. 11.

The arculus in the fore-wings of this specimen is of a primitive character. The upper part is very oblique and readily seen to be formed by M_{1-3} , M_1 , which separate before M_4 is met by the scarcely thickened cross-vein which forms the lower part.

The upper part of the hinder-wing is much less oblique.

The costal, subcostal, median, and cubito-anal spaces in both fore- and hinder-wing are opaque, dark brown to a level of about one cell before the arculus; the anal area of both wings tinged with orange-brown to about the same level. Beyond the nodus the wings are tinged with orange-brown almost to the apex.

The ventral plate curves upwards at its apex and carries about 8 small irregular spines. Its ventral surface has a deep conical depression to receive the points of the terebræ.

Abd. 62 mm., h. w. 63 mm. Pt. 2 mm.

(The measurement given by me (*loc. cit.*) of 70 mm. for the hinder-wing was an error.)

13. *TETRACANTHAGYNA PLAGIATA* (Waterhouse).

Tetracanthagyna plagiata Kirby, Cat. Odonata, p. 94; Krüger, Stettin. Entomol. Zeitg. 1898, pp. 287-288; Martin, Cat. Coll. Selys, *Æschn.* pp. 145-146 (figs. 144, 145).

1 ♀. Kakus, vi. 13.

Ris (*loc. cit.*) suggests that the next species, separated from *plagiata* on account of the colouring of the wings of the female, is identical with it; and that *T. plagiata* has two forms of female, one with a costal stripe and transverse band of brown on the wings

(*T. plagiata* type), the other with costal stripe only (*T. vittata* type). No male with transverse bands has been recorded. Structurally the females of the two forms are identical, and Ris's view is in all probability correct. In this case *T. vittata* McLach. will be a synonym of *T. plagiata* Waterh.

♀. Abd. 68 mm., h. w. 80 mm.

[TETRACANTHAGYNA VITTATA McLach.]

Tetracanthagyna vittata McLachlan, Trans. Entomol. Soc. London, 1898; Martin, Cat. Coll. Selys, Æschn. pp. 144-145 (fig. 143); Ris, Ann. Soc. Entomol. Belg. lv. 1911, pp. 243-244.

1 ♂, 1 ♀. Kuching, iv. 99.

See remarks under *T. plagiata*.

The female of this pair is possibly the largest and bulkiest individual of all living Odonata on record. The pair in full flight must have afforded a splendid sight to any entomological enthusiast.

♂. Abd. 70+7.5 mm., h. w. 72 mm.

♀. Abd. 70 mm., h. w. 83 mm.

14. *TETRACANTHAGYNA DEGORSI Martin.

Tetracanthagyna degorsi Martin, Bull. Soc. Entom. France, 1895; McLachlan, Trans. Entomol. Soc. London, 1898; Krüger, Stettin. Entomol. Zeitg. 1898, p. 288; Martin, Cat. Coll. Selys, Æschn. p. 147.

15. *TETRACANTHAGYNA WATERHOUSEI McLach.

Tetracanthagyna waterhousei McLachlan, Trans. Entomol. Soc. London, 1898; Martin, Mission Pavie, Névroptères, (sep.) p. 14; Martin, Cat. Coll. Selys, Æschn. pp. 143-144 (fig. 142).

16. TETRACANTHAGYNA BRUNNEA McLach.

Tetracanthagyna brunnea McLachlan, Trans. Entomol. Soc. London, 1898; Martin, Cat. Coll. Selys, Æschn. pp. 146-147 (fig. 141).

Tetracanthagyna plagiata Laidlaw (nec Waterhouse), Proc. Zool. Soc. London, 1902, p. 79.

(The specimen recorded by me, *loc. cit.* 1902, from the Malay Peninsula belongs here and not to *T. plagiata*.)

1 ♀. Sarawak: h. w. 66 mm., abd. 55 mm.

17. GYNACANTHA DEMETER Ris.

Gynacantha demeter Ris, Ann. Soc. Entomol. Belg. lv. 1911, pp. 245-246 (fig. 12).

1 ♂, 1 ♀. Matang Rd., 22. ii. 20.

18. GYNACANTHA DOHRNI Krüger.

Gynacantha dohrni, Krüger, Stettin. Entomol. Zeitg. 1898, pp. 277-287, fig. p. 280; Martin, Cat. Coll. Selys, Æschn.

pp. 199-200 (fig. 204); Ris, Ann. Soc. Entomol. Belg. lv. 1911, pp. 244-246 (fig. 11).

2♂♂. Saribas. 1♂. Quop, 19. iii. 14. 1♀. Mt. Merinjak, 23. v. 14. 2♀♀. Matang Rd., 1. iv. 12. 1♀. Kuching, 14. i. 96.

The collection also contains 3♀♀ which I have not been able to identify with certainty. They are from Tabekang, 13. v. 14, and Kakus, vi. 1913. In these specimens the wings are suffused with orange-brown. The material at my disposal is unfortunately insufficient to permit a satisfactory handling of the genus.

19. *GYNACANTHA BASIGUTTATA Selys.

Acanthagyna basiguttata Kirby, Cat. Odonata, p. 95.

Gynacantha basiguttata Krüger, Stettin. Entomol. Zeitg. 1898, pp. 277-284, fig. p. 279; Martin, Mission Pavie, Névroptères, (sep.) p. 14; id., Cat. Coll. Selys, Æschm. pp. 192-193 (fig. 197); [? fig. 197 = *G. dohrni* Krüger, see Ris, *loc. cit.*]; Ris, Ann. Soc. Entomol. Belg. lv. 1911, pp. 246-247 (fig. 13).

20. *GYNACANTHA BAYADERA Selys.

Gynacantha bayadera Selys, Ann. Mus. Civ. Genova 2. x. (xxx.) 1890, p. 51; Krüger, Stettin. Entomol. Zeitg. 1898, pp. 277-283, fig. p. 280; Martin, Mission Pavie, Névroptères, (sep.) p. 14; Martin, Cat. Coll. Selys, Æschm. pp. 196-197 (fig. 200); Ris, Ann. Soc. Entomol. Belg. lv. 1911, pp. 244-245; Ris, Nova Guinea, xiii. Zool., Livr. 2, pp. 111-112.

21. *GYNACANTHA MACLACHLANI Krüger.

Gynacantha maclachlani Krüger, Stettin. Entomol. Zeitg. 1898, pp. 277-287, figs. p. 280 and p. 319; Martin, Cat. Coll. Selys, Æschm. pp. 200-201 (fig. 205).

22. *GYNACANTHA HYALINA Selys.

Acanthagyna hyalina Kirby, Cat. Odonata, p. 95.

Gynacantha hyalina Selys, Ann. Mus. Civ. Genova, 2. x. (xxx.) 1890, p. 50; Krüger, Stettin. Entomol. Zeitg. 1898, pp. 277-283; Martin, Cat. Coll. Selys, Æschm. pp. 198-199 (fig. 203).

23. ANAX GUTTATUS (Burm.).

Anax guttatus Kirby, Cat. Odonata, p. 84; Laidlaw, Proc. Zool. Soc. London, 1902, p. 78; Martin, Mission Pavie, Névroptères, (sep.) p. 14; Martin, Cat. Coll. Selys, Æschm. pp. 23-24 (fig. 17); Ris, Senckenberg Naturfors. Gesellsch. xxxiv. 1913, p. 527.

1♂, 1♀. Lio Matu, 2. xi. 14.

24. *ANACLESCHNA JASPIDEA (Burm.).

Anacleschna jaspidea Kirby, Cat. Odonata, p. 86; Krüger, Stettin. Entomol. Zeitg. 1898, pp. 274-275; Martin, Cat. Coll. Selys, Æschm. pp. 30-31 (fig. 25).

GOMPHINÆ.

[For references to literature, see Laidlaw, Proc. Zool. Soc. London, 1914, pp. 51-63: "Contributions to a Study of the Dragonfly Fauna of Borneo.—Part II. The Gomphine and Chlorogomphina" (plate i).]

25. ICTINUS ACUTUS Selys (MSS.).
 26. *ICTINUS DECORATUS Selys.
 27. ICTINUS MELÆNOPS Selys.
 28. GOMPHIDIA MACLACHLANI Selys.
 29. *GOMPHIDIA KARSCHI Selys.
 30. SIEBOLDIUS JAPONICUS Selys.
 31. *MACROGOMPHUS ALBARDÆ Selys.
 32. MACROGOMPHUS DECEMLINEATUS Selys.
 33. MACROGOMPHUS QUADRATUS Selys.
 34. MICROGOMPHUS CHELIFER Selys.
 35. *LEPTOGOMPHUS SEMPERI Selys.
 36. LEPTOGOMPHUS WILLIAMSONI Laidlaw.
 37. BURMAGOMPHUS VERMICULATUS Martin, subsp. *insularis* Laidlaw.
 38. HETEROGOMPHUS ICTEROPS Martin, subsp. *borneensis* Laidlaw.
 39. HETEROGOMPHUS SUMATRANUS Krüger.
- Heterogomphus sumatranus* Laidlaw, Proc. Zool. Soc. London, 1917, p. 232.

LIBELLULIDÆ.

CORDULINÆ.

40. HEMICORDULIA ASSIMILIS Selys.
Hemicordulia (?) *assimilis* Kirby, Cat. Odonata, p. 46.
Hemicordulia assimilis Laidlaw, Proc. Zool. Soc. London, 1913, pp. 64-65; Martin, Cat. Coll. Selys, Cordul. pp. 11-12; Ris, Nova Guinea, ix. Zool. 3, pp. 501-502 (fig. 21).
41. AZUMA AUSTRALIS (Hagen).
Epopithalmia australis Kirby, Cat. Odonata, p. 54; Martin, Cat. Coll. Selys, Cordul. p. 63; Ris, Ann. Soc. Entomol. Belg. lv. 1911, pp. 248-250 (figs. 14, 15).

42. *AZUMA VITTIGERA (Ramb.).

Epophthalmia vittigera Kirby, Cat. Odonata, p. 54; Martin, Mission Pavie, Névroptères, (sep.) p. 8; id., Cat. Coll. Selys, Cordul. pp. 62-63.

43. MACROMIA CINCTA Ramb.

Macromia cincta Kirby, Cat. Odonata, p. 55; Krüger, Stettin. Entomol. Zeitg. 1899, p. 325; Martin, Cat. Coll. Selys, Cordul. p. 68; Laidlaw, Proc. Zool. Soc. London, 1913, p. 69.

2 ♂♂. Baram.

Length of abdomen 49 mm., of hinder-wing 45 mm.

44. *MACROMIA BORNEENSIS Krüger.

Macromia borneensis Krüger, Stettin. Entomol. Zeitg. 1899, pp. 330-332; Martin, Cat. Coll. Selys, Cordul. pp. 68-69.

45. *MACROMIA GERSTAECKERI Krüger.

Macromia gerstaeckeri Krüger, Stettin. Entomol. Zeitg. pp. 335-338; Laidlaw, Proc. Zool. Soc. London, 1902, pp. 76-78; Martin, Cat. Coll. Selys, Cordul. p. 70.

46. MACROMIA WESTWOODI Selys.

Macromia westwoodi Kirby, Cat. Odonata, p. 55; Krüger, Stettin. Entomol. Zeitg. 1899, pp. 325-326; Martin, Mission Pavie, Névroptères, (sep.) p. 8; Laidlaw, Proc. Zool. Soc. London, 1913, p. 69; Martin, Cat. Coll. Selys, Cordul. p. 72.

1 ♂. Lio Matu, 30. x. 14.

Length of abdomen 42 mm., of hinder-wing 41.5 mm.

47. MACROMIA EUTERPE Laidlaw.

Macromia euterpe Laidlaw, Proc. Zool. Soc. London, 1915, pp. 26-29, figs. 1, 2.

2 ♂♂, 1 ♀. Kinabalu. 1 ♂, 1 ♀. Mt. Merinjak, 600 ft., 24. v. 14.

48. *MACROMIA CINGULATA Ramb.

Macromia cingulata Kirby, Cat. Odonata, p. 55; Martin, Mission Pavie, Névroptères, (sep.) p. 8; Martin, Cat. Coll. Selys, Cordul. p. 70.

[Of the six Bornean species here recorded I have seen examples of three only. The large female specimen referred to in a previous paper (Proc. Zool. Soc. London, 1913, p. 68) is probably a female specimen of *Epophthalmia australis* Hagen.

Macromia euterpe Laidlaw appears to be closely allied to *M. westwoodi* Selys. Both species are characterized by having segments 1-6 of the abdomen of metallic-green lustre, whilst the remaining four segments are black, save for the yellow basal mark on 7.

On the other hand, the anal angle in the wings of the males are

different in shape; that of *M. euterpe* as shown in the figure given (*loc. cit.* text-fig. 1, A) is rather deeply indented, that of *M. westwoodi* much more nearly straight. But the readiest means of discriminating the two species is afforded by the anal appendages of the male. In the specimens of *M. euterpe* I have examined, the upper pair are in every case almost destitute of an external tooth, and are but little shorter than the lower appendix.

In the case of *M. westwoodi* both the specimen before me and that described by de Selys have the external tooth well developed, and the lower appendage exceeds the upper pair in length very considerably, projecting beyond them by nearly a third of its total length when seen in profile.

For the rest I record *M. cingulata* Ramb. and *M. gerstaeckeri* on Martin's authority.]

49. MACROMIDIA FULVA Laidlaw.

Macromidia fulva Laidlaw, Proc. Zool. Soc. London, 1915 pp. 29, 30, text-fig. 3.

1 ♂. Kinabalu. 1 ♀. Mt. Matang, 4. xii. 13.

The male is the type of the species and is in the British Museum.

The female is very immature. The body-colour is a pale brown, with darker bands at bases of abdominal segments 3-7, and there is a brown basal spot on each wing extending nearly to ax_3 , the rest of the wing being perfectly clear. Abd. 34 mm., h. w. 35 mm.

50. IDIONYX DOHRNI Krüger, subsp. BORNEENSIS.

Idionyx dohrni Krüger, subsp. *borneensis* Laidlaw, Proc. Zool. Soc. London, 1913, p. 67.

51. METAPHYA MICANS Laidlaw.

Metaphya micans Laidlaw, Sarawak Mus. Journ. No. 2, 1912, pp. 65-67, pl. i.; id., Proc. Zool. Soc. London, 1913, pp. 65-66 (pl. iv. figs. 1, 3).

The genus occurs in Borneo, New Guinea, and, I believe, in New Caledonia.

LIBELLULINÆ.

GROUP I. (of Ris).

52. TETRATHEMIS IRREGULARIS HYALINA Kirby.

Tetrathemis irregularis hyalina Ris, Cat. Coll. Selys, Libell. p. 47.

2 ♂♂. Matang Rd., 25. iii. 10. 1 ♂. Retuh, 16. v. 14. 1 ♂. Limbang, 8. ix. 09.

53. *TETRATHEMIS FLAVESCENS Kirby.

Tetrathemis flavescens Ris, Cat. Coll. Selys, Libell. p. 52.

1 ♂. Sarawak. Autotype in Brit. Mus. ♀ unknown.

54. ODA DOHRNI (Krüger).

Oda dohrni Ris, Cat. Coll. Selys, Libell. pp. 62-63 (figs. 25-28).

4 ♂♂, 3 ♀♀. Matang Rd.

55. HYLÆOTHEMIS CLEMENTIA Ris.

Hylæothemis clementia Ris, Cat. Coll. Selys, Libell. pp. 64-65 (figs. 29, 30); Laidlaw, Journ. Straits Branch R. As. Soc. No. 63, 1912, p. 95, pl., fig. 3.

1 ♀. Mt. Batu Lawi (allotype). Sarawak Museum.

GROUP II. (of Ris).

56. PORNOthemis SERRATA Krüger.

Pornothemis serrata Ris, Cat. Coll. Selys, Libell. pp. 92, 93 (fig. 64).

5 ♂♂, 2 ♀♀. Matang Rd.

57. ORCHITHEMIS XANTHOSOMA Laidlaw.

Orchithemis xanthosoma Ris, Cat. Coll. Selys, Libell. pp. 1056-1057 (fig. 615).

3 ♂♂, 2 ♀♀. Matang Rd. Type ♂ in British Museum; allotype ♀, coll. Selys.

58. ORCHITHEMIS PULCHERRIMA Brauer.

Orchithemis pulcherrima Ris, Cat. Coll. Selys, Libell. pp. 85-86 (figs. 54, 55).

1 ♀. Sadong Hill. 1 ♂, 2 ♀♀. Matang Rd., 24. vi. 09. 3 ♂♂, 3 ♀♀. Baram (*C. Hose*).

59. *ORCHITHEMIS PRUINANS (Selys).

Orchithemis pruinans Ris, Cat. Coll. Selys, Libell. pp. 87-88 (figs. 56, 57).

60. LYRIOTHEMIS CLEIS Brauer.

Lyriothemis cleis Ris, Cat. Coll. Selys, Libell. pp. 108-111 (figs. 78, 79, 80).

1 ♂. Limbang. 2 ♂♂. Mt. Murud, xi-xii. 14. 1 ♀. Tatau. 1 ♂. Selindong, 12. vi-xi. (2 ♂♂, 1 ♀. Baram; *C. Hose*.)

61. *LYRIOTHEMIS BIAPPENDICULATA (Selys).

Lyriothemis biappendiculata Ris, Cat. Coll. Selys, Libell. pp. 106-107 (figs. 71, 76, 77).

62. NESOXENIA LINEATA (Selys).

Nesoxenia lineata Ris, Cat. Coll. Selys, Libell. pp. 126-128 (figs. 93, 94).

1 ♂. Matang Rd.

63. *LATHRECISTA ASIATICA (Fabr.).

Lathrecista asiatica asiatica Ris, Cat. Coll. Selys, Libell. pp. 130-132 (figs. 95, 96, 97).

64. AGRIONOPTERA INSIGNIS (Ramb.).

Agrionoptera insignis insignis Ris, Cat. Coll. Selys, Libell. pp. 137-138 (fig. 99).

1 ♂. Buntal, vi. 1910. *Thorax* dark metallic green, lighter markings almost lost. *Abdomen* with segments 3-8 scarlet-red, each with apical, black ring; on 8 about one-sixth the length of segment. *Wings* suffused with golden yellow, especially at apices; basal marks golden brown; on fore-wing *sc* to *ax'*, *cu* to *Ac*. Hinder-wing *sc* not reaching *ax'*, *cu* to *Ac*.

Abd. 28 mm., h. w. 31 mm. Pt. 3 mm.

65. AGRIONOPTERA SECLINEATA Selys.

Agrionoptera seclineata Ris, Cat. Coll. Selys, Libell. pp. 144-145 (figs. 102, 103).

1 ♂, 1 ♀. Baram, 15. x. 1910.

The female from Baram has the wings hyaline throughout, and the red marking on the 7th abd. segment only.

66. CRATILLA METALLICA (Brauer).

Cratilla metallica Ris, Cat. Coll. Selys, Libell. pp. 152-153 (figs. 108, 109).

1 ♂. Mt. Murud, 5. xii. 14. 1 ♂, 1 ♀. Matang Rd., 13. x. 09.

67. CRATILLA LINEATA (Brauer).

Cratilla lineata Ris, Cat. Coll. Selys, Libell. pp. 153-155 (figs. 110, 111).

68. POTAMARCHA OBSCURA (Ramb.).

Potamarcha obscura Ris, Cat. Coll. Selys, Libell. pp. 156-157 (fig. 112).

69. ORTHETRUM GLAUCUM (Brauer).

Orthetrum glaucum Ris, Cat. Coll. Selys, Libell. pp. 233-234; Laidlaw, Proc. Zool. Soc. London, 1915, p. 25.

70. ORTHETRUM PRUINOSUM CLELIA (Selys).

Orthetrum pruinorum clelia Ris, Cat. Coll. Selys, Libell. pp. 242-243.

Orthetrum clelia Laidlaw, Proc. Zool. Soc. London, 1915, p. 26.

71. ORTHETRUM SABINA (Drury).

Orthetrum sabina Ris, Cat. Coll. Selys, Libell. pp. 223-225 (figs. 133, 149).

72. ORTHETRUM TESTACEUM (Burm.).

Orthetrum testaceum testaceum Ris, Cat. Coll. Selys, Libell. pp. 234-236; Laidlaw, Proc. Zool. Soc. London, 1915, p. 26.

73. ORTHETRUM CHRYSIS (Selys).

Orthetrum chrysis Ris, Cat. Coll. Selys, Libell. p. 237.

GROUP IV. (of Ris).

74. NANNOPHYA PYGMÆA Ramb.

Nannophya pygmæa Ris, Cat. Coll. Selys, Libell. pp. 347-348 (figs. 196, 197).

6 ♂ ♂, 2 ♀ ♀. Sarawak.

75. BRACHYGNONIA OCULATA (Brauer).

Brachygnonia oculata Ris, Cat. Coll. Selys, Libell. pp. 353-354 (figs. 203, 204).

3 ♂ ♂. 4th Mile, Rock Rd., Sarawak, 1909.

76. BRACHYGNONIA OPHELIA Ris.

Brachygnonia ophelia Ris, Cat. Coll. Selys, Libell. p. 354 (fig. 205).

1 ♀. 4th Mile, Rock Rd., Sarawak, 1910.

77. TYRIOBAPTA TORRIDA Kirby.

Tyriobapta torrida Ris, Cat. Coll. Selys, Libell. pp. 355-356 (figs. 206, 208), and pp. 1120-1121 (fig. 643).

1 ♀. Sadong. 1 ♀. Matang Rd., vi. 09.

78. TYRIOBAPTA LAIDLAWI Ris.

Tyriobapta laidlawi Ris, Cat. Coll. Selys, Libell. pp. 1121-1122 (fig. 644).

1 ♂. Sarawak (autotype). Coll. Ris.

79. TYRIOBAPTA KUKENTHALI (Karsch).

Tyriobapta kukenthalii Ris, Cat. Coll. Selys, Libell. pp. 357-358 (fig. 209), and p. 1122.

3 ♂ ♂. Sarawak.

80. BRACHYDIPLAX CHALYBEA CHALYBEA Brauer.

Brachydiplax chalybea Ris, Cat. Coll. Selys, Libell. p. 363.

Brachydiplax chalybea chalybea id. op. cit. p. 1123.

1 ♂. Santubang, 19.i.10. 1 ♂. Baram (*C. Hose*). 1 ♂. Kotabelud, 17.viii.13.

81. *RAPHISMA INERMIS* Ris.

Raphisma inermis Ris, Cat. Coll. Selys, Libell. pp. 370-371 (fig. 222).

3 ♂♂. Sarawak.

GROUP VI. (of Ris).

82. **DIPLACODES TRIVIALIS* (Ramb.).

Diplacodes trivialis Ris, Cat. Coll. Selys, Libell. pp. 468-470 (figs. 293, 294).

83. **CROCOTHEMIS SERVILIA* (Drury).

Crocothemis servilia Ris, Cat. Coll. Selys, Libell. pp. 539-542 (fig. 320).

84. **NEUROTHEMIS DISPARILIS* Kirby.

Neurothemis disparilis Ris, Cat. Coll. Selys, Libell. p. 566.

85. *NEUROTHEMIS FLUCTUANS* Fabr.

Neurothemis fluctuans Ris, Cat. Coll. Selys, Libell. pp. 566-569.
1 ♂. 4th Mile, Rock Rd., Sarawak. 1 ♂, 1 ♀. Limbang, 20. vi. 11. 1 ♀. N. Merinjak. 13. xi. 14. 1 ♂, 1 ♀. Baram (C. Hose).

86. *NEUROTHEMIS TERMINATA* Ris.

Neurothemis terminata Ris, Cat. Coll. Selys, Libell. pp. 569-572 (figs. 328, 329, 334, 335).

2 ♂♂. Matang Rd. 1 ♂. Matang Mountain. 1 ♂. Bidi, viii. 98. 1 ♂. Buntal, 16. iii. 12. 1 ♂. Samarakan, 17. vi. 10.

87. *RHODOTHEMIS RUFA* (Ramb.).

Rhodothemis rufa Ris, Cat. Coll. Selys, Libell. pp. 592, 593 (fig. 350).

1 ♀. Retuh, 16. v. 14.

GROUP VII. (of Ris).

88. *PSEUDAGRIONOPTERA DIOTIMA* Ris.

Pseudagrionoptera diotima Ris, Cat. Coll. Selys, Libell. pp. 748-749 (figs. 425, 426).

1 ♀. Sarawak.

89. *TRITHEMIS AURORA* (Burm.).

Trithemis aurora Ris, Cat. Coll. Selys, Libell. pp. 775-778 (fig. 442); Laidlaw, Proc. Zool. Soc. London, 1915, p. 26.

1 ♂, 1 ♀. Kinabalu. 2 ♂♂. Ulu Akar, 14. xi. 14. ♂. Mt. Murud, 18. vii. 14. 1 ♂. Samarakan, 17. vi. 10.

90. TRITHEMIS FESTIVA (Ramb.).

Trithemis festiva Ris, Cat. Coll. Selys, Libell. pp. 796-799 (figs. 456, 457); Laidlaw, Proc. Zool. Soc. London, 1915, p. 26.

3 ♂♂. Kinabalu. 1 ♀. Mt. Merinjak.

91. ZYGONYX IRIS Selys.

Zygonyx iris Ris, Cat. Selys, Libell. pp. 820-823 (fig. 478); Laidlaw, Proc. Zool. Soc. London, 1915, p. 26.

2 ♂♂. Kinabalu. 1 ♀. Mt. Murud, 2. xii. 14.

92. ONYCHOTHEMIS CULMINICOLA CELEBENSIS Ris.

Onychothemis culminicola Förster, subsp. *celebensis* Ris, Cat. Coll. Selys, Libell. pp. 835-836.

1 ♂. Tatau.

Under lip brown, upper lip and face brown, with faint metallic blue reflexion; thorax brown, also with rather a metallic tinge. Abdomen entirely scarlet; anal appendages—upper pair red at base, distal two-thirds black; lower appendage red, terminating in a pair of fine black points. Wings lightly suffused with yellow. Legs black. Abd. 32 mm.; h. w. 35 mm. Scarcely fully mature.

93. *ONYCHOTHEMIS CULMINICOLA CULMINICOLA Förster.

Onychothemis culminicola culminicola Ris, Cat. Coll. Selys, Libell. pp. 835, 836.

GROUP X. (of Ris).

94. HYDROBASILENS CROCEUS (Brauer).

Hydrobasilens croceus Ris, Cat. Coll. Selys, Libell. pp. 969-970 (fig. 562).

95. TRAMEA LIMBATA (Desjardins).

Tramea limbata Kirby, Cat. Odonata, p. 4.

Tramea translucida Kirby, loc. cit. p. 3.

Tramea limbata Ris, Cat. Coll. Selys, Libell. pp. 979-988 (figs. 563, 568, 569).

96. RHYOTHEMIS PHYLLIS PHYLLIS (Sulzer).

Rhyothemis phyllis phyllis Ris, Cat. Coll. Selys, Libell. pp. 939-940 (fig. 540, pl. v.).

97. *RHYOTHEMIS ATERRIMA Selys.

Rhyothemis aterrima Ris, Cat. Coll. Selys, Libell. p. 953.

98. RHYOTHEMIS PYGMÆA (Brauer).

Rhyothemis pygmaea Ris, Cat. Coll. Selys, Libell. p. 955.

99. RHYOTHEMIS OBSOLESCENS Kirby.
Rhyothemis obsolescens Ris, Cat. Coll. Selys, Libell. pp. 958-959
(pl. vii.).
100. RHYOTHEMIS TRIANGULARIS Kirby.
Rhyothemis triangularis Ris, Cat. Coll. Selys, Libell. pp. 962-
963.
101. *ZYXOMMA PETIOLATUM Ramb.
Zyxomma petiolatum Ris, Cat. Coll. Selys, Libell. pp. 903-905
(fig. 523).
102. *THOLYMIS TILLARGA (Fabr.).
Tholymis tillarga Ris, Cat. Coll. Selys, Libell. pp. 913-915
(figs. 531, 532).
103. PANTALA FLAVESCENS (Fabr.).
Pantala flavescens Ris, Cat. Coll. Selys, Libell. pp. 917-920
(fig. 533).
104. *CAMACINIA HARTERTI Karsch.
Camacinia harterti Ris, Cat. Coll. Selys, Libell. pp. 928-929
(figs. 538, 539).
105. UROTHEMIS SIGNATA INSIGNATA (Selys).
Urothemis signata insignata Ris, Cat. Coll. Selys, Libell.
pp. 1024-1025.
106. *ÆTHRIAMANTA GRACILIS (Brauer).
Brachydiplax gracilis Kirby, Cat. Odonata, p. 22.
Brachydiplax melanops Kirby, loc. cit.
Æthriamanta gracilis Ris, Cat. Coll. Selys, Libell. pp. 1032-
1033 (figs. 597, 598).

ZYGOPTERA.

CALOPTERYGINÆ.

107. NEUROBASIS CHINENSIS (Linn.).
Neurobasis chinensis Kirby, Cat. Odonata, p. 102; Förster,
Ann. Soc. Entomol. Belg. xli. 1897, pp. 204-210; Krüger, Stettin.
Entomol. Zeitg. 1898, pp. 74-75; Laidlaw, Proc. Zool. Soc. London,
1902, pp. 86-87.
Neurobasis chinensis chinensis Ris, Tijd. v. Entomol. lviii.
1915, p. 6.

108. MATRONOIDES CYANEIPENNIS Förster.

Matronoides cyaneipennis Förster, Wiener Entomol. Zeitg. 1897, iii.; id., Ann. Soc. Entomol. Belg. xl. 1897, (sep.) pp. 1-5
Laidlaw, Journ. Straits Branch R. Asiat. Soc. [63] 1912, p. 95
id., Proc. Zool. Soc. London, 1915, p. 30.

6 ♂♂. Mt. Selinguid and Mt. Batu Lawi, 3500 ft., 30. v. 11.
14 ♂♂, 5 ♀♀. Mt. Kinabalu, ix. 1913, up to 3000 ft.

109. VESTALIS AMÆNA Selys.

Vestalis amœna Kirby, Cat. Odonata, p. 103; Krüger, Stettin. Entomol. Zeitg. 1898, p. 75; Laidlaw, Proc. Zool. Soc. London, 1902, p. 87; id., Proc. Zool. Soc. London, 1915, pp. 30-31.

11 ♂♂, 5 ♀♀. Mt. Kinabalu up to 3000 ft.

110. VESTALIS BERYLLE Laidlaw.

Vestalis berylle Laidlaw, Sarawak Mus. Journ. ii. 6. 1915, p. 273.

1 ♂ (autotype). Retuh. Specimen in Brit. Mus.

Wings hyaline, slightly tinged with yellow. A single row of cells between Cu_1 and Cu_2 . Body metallic green. Legs black. The species is remarkable for the great relative length of the abdomen (70 mm.) as against 40 mm. for the hinder-wing.

EPALLAGINÆ.

111. PSEUDOPHLEA TRICOLOR (Selys).

Pseudophlea tricolor Kirby, Cat. Odonata, p. 109.

8 ♂♂. Retuh, 14. ix. 14. 2 ♂♂, 2 ♀♀. Saribas (3 ♂♂, Baram; *C. Hose*).

112. PSEUDOPHLEA SUBCOSTALIS (Selys).

Pseudophlea subcostalis Kirby, Cat. Odonata, p. 109; Laidlaw, Proc. Zool. Soc. London, 1915, pp. 32-33.

4 ♂♂. Tampassuk, 19. viii. 13. 2 ♂♂. Saribas. 3 ♂♂. Mt. Murud. 4 ♂♂. Ulu Akar.

113. PSEUDOPHLEA SUBNODALIS Laidlaw.

Pseudophlea subnodalis Laidlaw, Proc. Zool. Soc. London, 1915, p. 31.

13 ♂♂, 1 ♀?. Mt. Kinabalu, ix. 13.

114. PSEUDOPHLEA BASALIS Laidlaw.

Pseudophlea basalis Laidlaw, Proc. Zool. Soc. London, 1915, p. 32.

4 ♂♂. Kinabalu, 11-18. ix. 13.

The males of these four species are at first sight very much alike. They may be discriminated as follows:—

- A. Opaque colouring of hinder-wing begins at nodus or one or two cells before. Its margin runs transversely across the wing; never a dark subcostal band extending to the wing-base.
Abd. 35 + 1 mm., h. w. 27.5 mm. *P. tricolor* Selys.
- B. Opaque colouring of hinder-wing begins about half-way between wing-base and nodus. Its margin runs obliquely outwards and backwards, and is rather irregular; usually a hyaline indentation about 4-6 cells deep between M_1 and Cu_1 . Dark band in subcostal space of all four wings extending to wing-base in adult specimens, reaching the nodus in the fore-wing. Apex of fore-wing tipped with dark brown from the middle of the pterostigma.
Abd. 30 + 1 mm., h. w. 25 mm. *P. subcostalis* Selys.
- C. Opaque area of hinder-wing begins at about two-thirds of the distance from the wing-base to the nodus, but *area between M_{1+2} and R is always hyaline up to nodus*. Dark subcostal stripe not so well marked as in *P. subcostalis*, and scarcely indicated on the fore-wing, which also has much less opacity at its apex.
Abd. 35 + 1 mm., h. w. 28-30 mm. *P. subnodalis* Laidlaw.
- D. Hinder-wing opaque from the base to apex except for the basal space, and for certain quite irregular areas which in some specimens occur on the wings. Costal and subcostal spaces of fore-wing dark brown up to nodus.
Abd. 35 + 1 mm., h. w. 27-28 mm. *P. basalis* Laidlaw.

Unfortunately I do not know the females.

These species probably all belong to the group *P. variegata* (Ramb.). The group occurs in all parts of the Sondaic area.

115. PSEUDOPHÆA IMPAR INÆQUIPAR (Selys).

Pseudophæa inæquipar Kirby, Cat. Odonata, p. 109.

4 ♂♂. Tatau.

At most these are but a local race of the older species *P. impar* (Selys) from Malacca and Sumatra.

Its nearest allies seem to be *P. dispar* (Ramb.) and *P. fraseri* Laidlaw from W. India, though the relationship is not very close.

116. DYSPLÆA LUGENS Selys.

Dysplæa lugens Kirby, Cat. Odonata, p. 110.

2 ♂♂. Limbang River, iv. 10. 1 ♀ (?). Retul, 16. v. 14.

The wings of the female specimen show in light hyaline brown a colour-pattern identical with that of the male.

♂. Abd. 38 mm. + 1.5 mm., h. w. 32 mm. ♀. Abd. 30 mm., h. w. 29 mm.

117. *DYSPHÆA LIMBATA* Selys.

Dysphæa limbata Kirby, Cat. Odonata, p. 40.

3 ♂♂. Tatau. 1 ♂. Baram (*C. Hose coll.*; no date).

The male from Baram belongs to the race *semilimbata* of Selys. It is without the black costal line between the nodus and pterostigma of the fore-wing. All the specimens have the hyaline parts of the wings suffused with yellow-brown.

♂. (Baram). Abd. 34 mm. + 1.5 mm., h. w. 30 mm.

♂. Tatau. Abd. 35 mm. + 1.5 mm., h. w. 30.5 mm.

LIBELLAGINÆ.

118. *RHINOCYPHA BISERIATA* Selys.

Rhinocypha biseriata Kirby, Cat. Odonata, p. 113.

Very closely related to *R. angusta* Selys from Sumatra and to *R. perforata* Perch. from Malacca and Lower Siam. The group is Indo-Chinese and Sondaic in distribution.

119. *RHINOCYPHA KARSCHI* Krüger.

Rhinocypha karschi Krüger, Stettin. Entomol. Zeitg. 1898, pp. 83-85; Laidlaw, Proc. Zool. Soc. London, 1902, p. 90.

4 ♂♂. Limbang, ix. 09.

The species stands alone, without, so far as I know, near allies. It is confined to the Sondaic area.

120. **RHINOCYPHA STYGIA* Förster.

Rhinocypha stygia Förster, Ann. Soc. Entomol. Belg. xli. 1897, pp. 210-211.

121. *RHINOCYPHA MOULTONI* Laidlaw. (Text-fig. 1, a, b.)

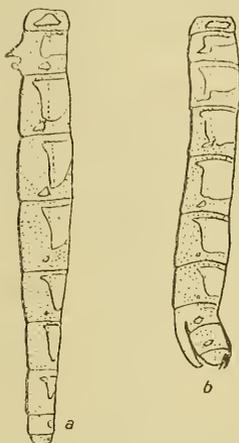
Rhinocypha moultoni Laidlaw, Proc. Zool. Soc. London, 1915, p. 35.

4 ♂♂, 6 ♀♀. Kinabalu, Sept. 1913.

The adult female of this species resembles that of *R. stygia* Förster very closely, to judge at least by Förster's rather brief description. But the fully adult male is so brightly coloured about the body—much more so than the female—that I do not think it possible that *stygia*, which is entirely black about the body, can be merely a very adult specimen of the same species. The four males of *moultoni* that I have been able to examine are fully mature, and it is interesting to find that they retain on the abdomen the colour-pattern characteristic of the general female, which is lost in the mature female. For whereas the male retains the paired dorsal spots of the abdomen from segment 2 to 9 as rich orange-red marks in addition to the yellow paired lateral marks, these dorsal marks are entirely lost in the fully adult female, but are very conspicuous in newly-emerged females as large lemon-yellow areas covering about three-quarters of the

dorsum of each segment from 2 to 8; fused at their bases with the lateral system. (In the male the two series, dorsal and lateral, are fused for their whole length from 2 to 6.) So that,

Text-figure 1, *a*, *b*.



Lateral view of colour-pattern of abdomen of *Rhinocypha moultoni*.
a, male; *b*, immature female.

whilst not refusing to admit the possibility of *R. stygia* being the extremely adult stage of *R. moultoni*, I do not think it at all likely, and retain here the latter species as distinct.

122. RHINOCYPHA CUCULLATA Selys.

Rhinocypha cucullata Kirby, Cat. Odonata, p. 114.

6 ♂♂. Tatau. 5 ♂♂. Saribas.

An isolated species, confined apparently to Borneo.

123. *RHINOCYPHA HUMERALIS Selys.

Rhinocypha humeralis Kirby, Cat. Odonata, p. 114.

124. *RHINOCYPHA EXIMIA Selys.

Rhinocypha eximia Kirby, Cat. Odonata, p. 114.

125. RHINOCYPHA sp. A.

This species was identified for me by Martin. He has named and described it in the forthcoming monograph of the Calopterygidae in the Selysian collection, the appearance of which has been very considerably delayed. As I do not wish to forestall him, I note here only that the species appears to me to be related to Förster's *R. aurulenteus* from Buru, and perhaps more remotely

Diagnostic table for males of Bornean species of Rhinocypha.

- A. All four wings with opaque areas.
- a. Opaque area of hinder-wing with hyaline windows, "mesothoracic triangle" present *R. biseriata* Selys.
- b. Opaque area of wings without hyaline windows.
1. Large antehumeral blue ray on thorax.
- a. Terminal two-fifths of wings opaque *R. humeralis* Selys.
- β. Terminal fourth of wings opaque *R. eximia* Selys.
2. Antehumeral band of synthorax narrow.
- γ. Terminal opaque area of wings beginning at level of prostigma in front; posterior tibiae not dilated; slight enlargement of posterior margin of second abdominal segment *Rhinocypha* sp. A.
- δ. Terminal two-fifths of wings opaque. Posterior tibiae dilated, blue on anterior surface. Marked enlargement of posterior margin of second abdominal segment *R. cucullata* Selys.
- B. Hinder-wings only with opaque markings. Dorsal marks of abd. segments 2-8 red *R. karschi* Krüger.
- C. No opaque markings on wings.
1. Abdominal markings lost *R. stygia* Förster.
2. Dorsal markings on abdomen red, lateral markings yellow.
- α. Apex of clypeus marked with orange-yellow. Lateral abdominal markings from segment 2-5 broken into an anterior line and posterior spot. The anterior line is entirely fused with the dorsal mark on these segments. From 6-8 the lateral series is represented only by an anterior spot fused to the dorsal marks *R. moultoni* Laidlaw.
- β. Apex of clypeus black. Lateral abdominal markings present as a complete band of rather irregular outline on segments 2-7, only fused with the dorsal marks at its extreme base, and not at all on segments 2-3, on which segments the dorsal mark is small or absent *Rhinocypha* sp. B.

127. RHINONEURA VILLOSIPES Laidlaw.

Rhinoneura villosipes Laidlaw, Proc. Zool. Soc. London, 1915, pp. 33-35 (text-figs. 4, 5A).

1 ♂. Mt. Kinabalu.

Autotype in British Museum.

128. MICROMERUS AURANTIACUS Selys.

Micromerus aurantiacus Kirby, Cat. Odonata, p. 115.

2 ♂♂. Limbang.

129. MICROMERUS SEMIOPACUS Selys.

Micromerus semiopacus Kirby, Cat. Odonata, p. 115; Ris, Ann. Soc. Entomol. Belg. lv. 1911, pp. 233-234 (fig. 1).

3 ♂♂. Lio Matu. 2 ♂♂. Ulu Akar, xi. 14. 2 ♀♀. Lio Matu.

130. MICROMERUS HYALINUS Selys.

Micromerus hyalinus Kirby, Cat. Odonata, p. 115.

2 ♂♂. Baram, x. 1910. 2 ♂♂. Tatau. 3 ♂♂ ad., 3 ♂♂ juv., 3 ♀♀. Saribas.

131. MICROMERUS STICTICUS Selys.

Micromerus sticticus Kirby, Cat. Odonata, p. 115.

3 ♂♂. Tatau.

Incertæ sedis.

132. DEVADATTA ARGYROIDES (Selys).

Devadatta argyroides Kirby, Cat. Odonata, p. 111.

This genus seems to me to be not very remote in venation from the "Legion" *Megapodagrion*.

Legion MEGAPODAGRION.

133. *PODOLESTES ORIENTALIS Selys.

Podolestes orientalis Kirby, Cat. Odonata, p. 126; Krüger, Stettin. Entomol. Zeitg. 1898, pp. 98, 99.

134. PODOLESTES CHRYSOPUS Selys.

Podolestes chrysopus Kirby, Cat. Odonata, p. 126.

1 ♂, 1 ♀ in cop. Matang Rd., 28. x. 09. 2 ♂♂. Baram, vii. 09. 2 ♂♂. 4th Mile, Rock Rd., Sarawak, 24. vi. 09. 1 ♀. Matang Rd., 24. vi. 09.

135. RHINAGRION BORNEENSE (Selys).

Amphilestes borneensis Kirby, Cat. Odonata, p. 126; Karsch, Entomol. Nachr. xvii. (1891), no. 16, p. 2; Krüger, Stettin. Entomol. Zeitg. 1898, pp. 137-138.

10 ♂♂, 2 ♀♀. Lio Matu, 4. xi. 14. 1 ♀. Kuching, 5. xi. 09.

♂. Agrees fairly closely with the description of the type. The yellow mark on the dorsum of the thorax is triangular rather than oval, its base running quite transversely across the thorax, and its inner side close to the mid-dorsal carina. In one specimen, however, the anterior margin of the triangle is distinctly oblique, so that the mark becomes more nearly oval. The colouring of the ventral side of the thorax seems to vary with age; it is black in the fully adult specimens, but on the younger it is yellow with a smoky tinge.

Abdomen: segments 1-7 reddish brown, 1 with yellowish mark on dorsum, 2-7 with black apical ring, and 2 with pale sub-apical mark as well; 8, 9 white, enamelled; 8 with a reddish tinge of rather blue-white; 10 black.

Abd. 30 mm. + 1 mm., h. w. 21 mm.

♀. Head black, but with yellow median mark on post-clypeus and yellow margins around the eyes. Prothorax light golden

brown above, paler below, with the posterior lobe whitish green. Thorax golden brown above, passing to grey-white below. Triangular marks on the dorsum as in the male.

Abdomen: segment 1 greenish white above, pale below: segments 2-7 reddish brown, progressively darker backwards, with subterminal grey-green rings; segments 8-10 black, 8 with lateral longitudinal whitish band.

Abd 27 mm., h. w. 25 mm.

(For generic name, see Calvert, Proc. Acad. Nat. Sci. Philadelphia, 1913, p. 258.)

136. *RHINAGRION ELOPURÆ (Selys).

Amphilestes elopuræ Kirby, Cat. Odonata, p. 126.

Legion PLATYCNEMIS.

137. CÆLICCIA OCTOGESIMA (Selys).

Cæliccia octogesima Kirby, Cat. Odonata, p. 128.

1 ♀. Matang Rd., 3. i. 10 (damaged).

138. CÆLICCIA MEMBRANIPES (Ramb.) (race NEMORICOLA Laidlaw?).

Cæliccia nemoricola Laidlaw, Journ. Straits Branch R. Asiat. Soc. [63] p. 95; id., Proc. Zool. Soc. London, 1915, p. 37.

Cæliccia membranipes race *nemoricola* Laidlaw, Proc. Zool. Soc. London, 1917, pp. 230-231.

Common on Mt. Kinabalu.

139. CÆLICCIA FLAVOSTRIATA Laidlaw.

Cæliccia flavostriata Laidlaw, Proc. Zool. Soc. London, 1917, pp. 223-224 (figs. 1, 2).

2 ♂♂. Mt. Merinjak, 21. v. 14. 1 ♂. Mt. Matang, 4. xii. 13.

Autotype in British Museum. Paratype in Coll. Mus. Sarawak and in my own collection.

140. CÆLICCIA CAMPIONI Laidlaw.

Cæliccia campioni Laidlaw, Proc. Zool. Soc. London, 1917, pp. 224-225 (figs. 3, 4).

1 ♂. Lio Matu, 31. x. 14.

141. CÆLICCIA MACROSTIGMA Laidlaw.

Cæliccia macrostigma Laidlaw, Proc. Zool. Soc. London, 1917, pp. 225-227 (figs. 5, 6).

1 ♂. Baram, 20. x. 10 (1 ♀? 19. x. 10).

142. CÆLICCIA NIGROHAMATA Laidlaw.

Cæliccia nigrohamata Laidlaw, Proc. Zool. Soc. London, 1917, p. 228 (figs. 7, 8).

[*CÆLICICIA BORNEENSIS* (Selys).]

Calicicia borneensis Kirby, Cat. Odonata, p. 128.

(See under *C. octogesima* (Selys), Laidlaw, Proc. Zool. Soc. London, 1917, p. 231.)

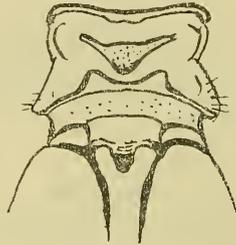
143. *COPERA ATOMARIA* (Selys). (Text-fig. 3.)

Copera atomaria Kirby, Cat. Odonata, p. 129.

(See also Krüger, Stettin. Entomol. Zeitg. 1898, pp. 103-107; Ris, Tijdschr. v. Entomol. lviii. 1915, p. 7, sep.)

Upper anal appendages of male about one-half length of lower pair. Tibiæ not dilated. In the adult male the thorax is bronze-black above, with a few irregular yellow spots representing the antehumeral band. The sides of the thorax are mottled black and yellow, the legs are entirely red-brown. Abdomen black, with yellow lateral markings on segments 1 and 2 and a basal bluish-white ring on segments 3-6. Segment 10 and upper pair of anal appendages white, lower pair of appendages black; distal half marked with white dorsally.

Text-figure 3.



Prothorax of *Copera atomaria* seen from above.

Adult female coloured much as the male, but duller. The posterior femora have a row of black dots along their dorsal surface. The posterior thoracic margin of the female carries a pair of small triangular projections directed upwards and forwards. These are much less acute than the corresponding structures of the Sumatran species, *C. acutimargo* Krüger.

♂. Abd. 28 + 0.75 mm., h. w. 17.5 mm. ♀. Abd. 30 mm., h. w. 19 mm.

Specimens from Lio Matu seem to have been taken in company with *Caconeura verticalis* Selys; at least in many cases I found examples of both species papered together.

To what extent these Bornean specimens are to be regarded as distinct from other allied forms of the genus it is at present impossible to say. But I think it likely that a number of forms of the *vittata* series of the genus will ultimately be characterized. As I have seen only examples of one form from Borneo, I have retained for it the Selysian name.

Legion AGRION.

144. ONYCHARGIA ATROCYANA Selys.

Onychargia atrocyana Kirby, Cat. Odonata, p. 139; Krüger, Stettin. Entomol. Zeitg. 1898, p. 118; Ris, Nova Guinea, xiii. Zool. 2, pp. 94-95 (fig. 13).

1 ♂. Mt. Murud, 18. xii. 14. Very adult, lacking the last four abdominal segments.

145. CERIAGRION CERINORUBELLUM (Brauer).

Ceriagrion cerinorubellum Kirby, Cat. Odonata, p. 154; Krüger, Stettin. Entomol. Zeitg. 1898, pp. 119-120; Ris, Abh. d. Senckenberg Naturforsch. Gesellsch. xxxiv. p. 519; id., Tijdschr. v. Entomol. lviii. 1915, p. 13 (sep.): Laidlaw, Rec. Indian Mus. xvi. part ii. p. 188.

2 ♂ ♂. 4th Mile, Rock Rd., Sarawak, 30. xi. 09. 3 ♂ ♂. Retul, 16. v. 14.

146. CERIAGRION BELLONA Laidlaw.

Ceriagrion bellona Laidlaw, Sarawak Mus. Journal, ii. 1916, p. 274.

2 ♂ ♂. Mt. Matang, xii. 13. 1 ♂. Kinabalu, ix. 13.

Ab commences before the level of Ac. Wings in adult lightly tinged with yellowish brown. Excision on hind-margin of tenth abdominal segment Λ -shaped. Lower anal appendages (of male) about twice as long as upper pair. Head orange-brown above, greenish white below. Prothorax and synthorax coppery brown above, yellowish green below. Abdomen: first segment coppery brown, second to sixth carmine, seventh to tenth dull brown.

Abd. 28.5 mm., h. w. 20 mm.

147. PSEUDAGRION MICROCEPHALUM (Ramb.).

Pseudagrion microcephalum Kirby, Cat. Odonata, p. 153; Ris, Supplement Entomol. no. 5, 1916, pp. 40-43 (figs. 13-19); Laidlaw, Rec. Ind. Mus. xii. pp. 23-24 (fig. 1); Ris, Ann. Soc. Entomol. Belg. 1911, p. 235.

1 ♀ (damaged). 4th Mile, Rock Rd., Sarawak.

Dr. Ris gives a full synonymy of this species, and a description of several races characterized by the shape of the anal appendage of the male (Ris, Suppl. Entomol. *loc. cit.*).

The Bornean species seem to be below the average in size.

148. PSEUDAGRION PRUINOSUM (Burm.).

Pseudagrion pruinorum Kirby, Cat. Odonata, p. 153; Krüger, Stettin. Entomol. Zeitg. 1898, p. 119; Laidlaw, Sarawak Mus. Journal, ii. 1916, p. 275; Ris, Nova Guinea, xiii. Zool. 2, pp. 97-98 (fig. 18).

149. *ACIAGRION BORNEENSE* Ris.

Aciagrion borneense Ris, Ann. Soc. Entomol. Belg. 1911, pp. 234-235 (figs. 2-3).

1 ♀. Tabekang, 12. v. 14.

Occurs also in the Malay Peninsula.

150. *AGRIOCNEMIS FEMINA* (Brauer).

Agriocnemis femina Ris, Supplement Entomol. no. 5, 1916, pp. 22-26 (figs. 13, 17).

(For full synonymy of this species, see Ris, *loc. cit.*)

151. *ARGIOCNEMIS RUBESCENS* Selys.

Argiocnemis rubescens Kirby, Cat. Odonata, p. 158; Ris, Abh. d. Senckenberg Naturfors. Gesellsch. xxxiv. pp. 516-518.

(For this species also, consult Ris's paper quoted here.)

1 ♂. Malimau, 5. xi. 10. 1 ♂. Mt. Merinjak, 18. v. 14.
1 ♂. 4th Mile, Rock Rd., Sarawak.

152. *AMPHICNEMIS WALLACEI* Selys.

Amphicnemis wallacei Kirby, Cat. Odonata, p. 157; Ris, Ann. Soc. Entomol. Belg. lv. 1911, pp. 236-237 (figs. 4, 5); Laidlaw, Proc. Zool. Soc. London, 1913, p. 70.

1 ♂. Baram.

153. *AMPHICNEMIS LOUISÆ* Laidlaw.

Amphicnemis louisæ Laidlaw, Proc. Zool. Soc. London, 1913, p. 71, pl. iv. figs. 5, 5a; Ris, Tijdschr. v. Entomol. lviii. 1915, pp. 13-14.

154. *AMPHICNEMIS REMIGER* Laidlaw.

Amphicnemis remiger Laidlaw, Journal Straits Branch R. Asiat. Soc. [63] 1912, pp. 96-97, pl. fig. 4; id., Proc. Zool. Soc. London, 1913, p. 72.

1 ♂. Batu Lawi. 2 ♂♂ (imperfect). Murud, 20. xii. 14.

155. *AMPHICNEMIS MADELENÆ* Laidlaw.

Amphicnemis madelencæ Laidlaw, Proc. Zool. Soc. London, 1913, pp. 71-72 (pl. iv. figs. 6, 6a).

2 ♂♂. Kuching.

156. *AMPHICNEMIS MARTINI* Ris.

Amphicnemis martini Ris, Ann. Soc. Entomol. Belg. lv. 1911, pp. 237-238 (fig. 6); Laidlaw, Proc. Zool. Soc. London, 1913, pp. 72-73.

1 ♂. Limbang. 1 ♂. Mt. Merinjak, 22. xi. 14 (both imperfect).

And, in addition, I have before me 6 ♀♀ from Murud, 20. xi. 14,

and 1 ♀ from Limbang which I have not identified with certainty; also a damaged female specimen from Tatau which is possibly identical with *A. gracilis* Krüger from Sumatra; and, lastly, 1 ♀ from Baram belonging to a different, and undetermined, species.

I hope to pay more attention to this interesting genus when opportunity offers.

157. *PERICNEMIS STICTICA* Selys.

Pericnemis stictica Kirby, Cat. Odonata, p. 158; Krüger, Stettin, Entomol. Zeitg. 1898, p. 158; Laidlaw, Proc. Zool. Soc. London, 1902, p. 386.

1 ♂. Limbang (in fragments).

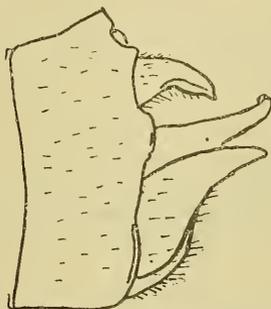
158. *TEINOBASIS KIRBYI* Laidlaw (?). (Text-fig. 4.)

Teinobasis kirbyi Laidlaw, Proc. Zool. Soc. London, 1902, pp. 386-387.

Teinobasis superba Laidlaw (nec Selys), Proc. Zool. Soc. London, 1917, p. 231.

1 ♂. Lio Matu, 4. xi. 14. (Specimen to be sent to British Museum.)

Text-figure 4.



Lateral view of anal appendages of *Teinobasis kirbyi*, ♂ (?).

M_2 and M_s united from their origin for the length of one cell. Upper branch of superior anal appendage short, about one-half the length of lower branch, which is nearly equal in length to the lower appendage. A_c lies much nearer the level of Ax_2 than of Ax_1 .

Head: upper surface entirely black; the upper lip polished, but without metallic reflex; lower lip grey-white; the rest of the under and posterior surfaces greenish white.

Prothorax: black above, grey-white below.

Synthorax: black above, no trace of antehumeral stripes; dark grey on the sides, a little pulverulent; paler below.

Abdomen: slender, but segments 7-10 distinctly stouter

than 3-6. Bronze-black above, brownish white below. Anal appendages (see text-fig. 4) brown tipped with black.

Legs: grey-white, with black articulations and black lines on the posterior surfaces.

Wings: rather smoky; pterostigma almost square, but its inner margin more oblique than its outer; dark brown, very finely edged with lighter colour surrounded by a thickened black vein. $P \times 15$.

Abd. $40 + 5$ mu., h. w. 23 mm.

Segments 3-6 of the abdomen measure 29.5 mm.

Comparison of this specimen with Ris's figures and examination with his diagnostic table (Ris, Nova Guinea, xiii. Zool. 2, pp. 100-102, fig. 22) has enabled me to determine that this species is not *T. superba* Selys, from which species it differs in its smaller size, absence of antehumeral stripes, and shape of anal appendages. My species, *T. kirbyi*, is unfortunately very imperfectly known, but on the whole the present specimen would seem to resemble it closely in colouring and venation, and it may, I think, be regarded as conspecific with it.

159. TEINOBASIS RAJAH Laidlaw.

Teinobasis rajah Laidlaw, Journ. Straits Branch R. Asiat. Soc. [63] 1912, p. 97.

2 ♂♂. Limbang, 22. vi. 11.

Thorax orange-red above, with median bronze-green stripe.

Abd. 33 mm., h. w. 20 mm.

Autotype ♂ in British Museum. Paratype ♂, coll. Ris.

160. STENAGRION DUBIUM (Laidlaw).

Pseudagrion (?) *dubium* Laidlaw, Journ. Straits Branch R. Asiat. Soc. [63] 1912, pp. 97-98, pl., fig. 5.

Stenagrion dubium id., Proc. Zool. Soc. London, 1915, p. 39; id., op. cit. 1917, p. 231 (fig. 10).

Legion PRORONEURA.

[I propose the following arrangement of the Oriental species grouped under the Selysian genera *Disparoneura* and *Caconeura* (*Alloneura* Selys). It is, I think, natural, and has the advantage of retaining many of the species in the original genera:—

- A. Ac lies midway between ar_1 and ar_2 .
- a. Posterior lobe of prothorax of female armed with hook-like projections.
- α. Ab meeting nerve descending from quadrilateral.
- i. Cu_1 reaching hinder margin of wings beyond half the wing-length *Chloroneura* Laidlaw.
- ii. Cu_1 reaching hinder margin of wings before half the wing-length *Disparoneura* Selys.
- β. Vestige of Ab not meeting nerve descending from quadrilateral, or absent altogether *Caconeura* Kirby.
- b. Posterior lobe of prothorax of female simple *Indoneura* Laidlaw.
- B. Ac lies nearly at level of ar_1 or proximal to it *Risoneura* Munz.

Of these genera: *Chloroneura* appears to be confined to peninsular India; *Disparoneura* has a westerly range, extending from Africa to India and Burma and reaching its limit eastwards in Borneo; *Caconeura*, more specialized in some respects, extends from Burma to Malaya, with one species in Ceylon; whilst the still more specialized *Risoneura* is Papuan (see Laidlaw, Rec. Ind. Mus. xiii. 1917, pp. 343-344.)]

161. *CACONEURA DORSALIS* (Selys).

Caconeura dorsalis Kirby, Cat. Odonata, p. 134.

Disparoneura dorsalis Laidlaw, Proc. Zool. Soc. London, 1913, p. 75.

3 ♂ ♂. Baram (*C. Hose*). 1 ♂. Murud, 18. xii. 14.

162. *CACONEURA VERTICALIS* (Selys).

Disparoneura verticalis Kirby, Cat. Odonata, p. 134; Krüger, Stettin. Entomol. Zeitg. 1898, p. 114; Förster, Fasc. Malay., Zool. iv. Odonata, Part II., (sep.) p. 14; Laidlaw, Proc. Zool. Soc. London, 1913, p. 75.

21 ♂ ♂, 3 ♀ ♀. Lio Matu, xi. 14. 2 ♂ ♂, 1 ♀. Retuh, 14. v. 14.

The presence of a vestige of Cu_2 is constant in all these specimens.

163. *CACONEURA HYPERYTHRA* (Selys).

Caconeura hyperythra Kirby, Cat. Odonata, p. 134.

Disparoneura hyperythra Laidlaw, Proc. Zool. Soc. London, 1913, p. 76.

164. *CACONEURA HOSEI* (Laidlaw).

Disparoneura hosei Laidlaw, Proc. Zool. Soc. London, 1913, pp. 76-78.

1 ♂. Baram (*C. Hose*), autotype, coll. F. F. L. 5 ♂ ♂. Lio Matu, 4. xi. 14. (1 ♂. Coll. Brit. Mus.)

165. *CACONEURA PERAMCENA* (Laidlaw).

Disparoneura peramcena Laidlaw, Proc. Zool. Soc. London, 1913, pp. 76-77 (pl. iv. figs. 8, 8a).

166. **CACONEURA INTERRUPTA* (Selys).

Disparoneura interrupta Kirby, Cat. Odonata, p. 134.

167. **CACONEURA COLLARIS* (Selys).

Disparoneura collaris Kirby, Cat. Odonata, p. 134.

Disparoneura notostigma collaris Förster, Fasc. Malay., Zool. iv. Odonata, Part II., (sep.) p. 13.

*[*CACONEURA LANSBERGI* (Selys).]

Caconeura lansbergi Kirby, Cat. Odonata, p. 134.

Location somewhat doubtful.

168. **CACONEURA GRACILLIMA* (Selys).

Caconeura gracillima Kirby, Cat. Odonata, p. 134.

169. *CACONEURA MOULTONI* (Laidlaw).

Disparoneura moultoni Laidlaw, Journ. Straits Branch B. Asiat. Soc. [63] 1912, pp. 98-99.

1 ♂. Batu Lawi, 11. v. 11.

Upper lip pale yellow, with fine black margin, otherwise velvety black above. Dorsum of prothorax and synthorax black, a fine yellow lateral stripe on the latter. Abdomen brownish black.

No vestige of Cu_3 ; Cu_1 reaches first cross-nerve after the quadrangle in the fore-wing, the second in the hinder-wing; 14 postnodal costals in fore-wing.

Abd. 34 mm., h. w. 19 mm.

170. **DISPARONEURA AURANTIACA* Selys.

Disparoneura aurantiaca Kirby, Cat. Odonata, p. 134.

171. *DISPARONEURA ANALIS* (Selys).

Disparoneura analis Kirby, Cat. Odonata, p. 134; Krüger, Stettin. Entomol. Zeitg. 1898, p. 111; Laidlaw, Sarawak, Mus. Journ. ii. no. 6, 1915, p. 275.

1 ♂. Baram, 29. iii. 10. 1 ♂. Saribas, 09. 1 ♂. Murud, 18. xii. 14. 1 ♂. Lio Matu, 1. xi. 14.

Legion PLATYSTICTA.

172. *DREPANOSTICTA RUFOSTIGMA* (Selys).

Platysticta rufostigma Kirby, Cat. Odonata, p. 133; Laidlaw, Proc. Zool. Soc. London, 1913, p. 79 (pl. iv. fig. 9).

(For definition of the genus *Drepanosticta*, see Laidlaw, Records Ind. Mus. xiii. part vi. p. 339 (1917).)

173. *PROTOSTICTA VERSICOLOR* Laidlaw.

Protosticta versicolor Laidlaw, Proc. Zool. Soc. London, 1913, pp. 78-79.

174. *PROTOSTICTA KINABALUENSIS* Laidlaw.

Protosticta kinabaluensis Laidlaw, Proc. Zool. Soc. London, 1915, pp. 37-38 (fig. 5, B).

Also 1 ♂ (imperfect), Mt. Merinjak, 26. v. 14, belonging to *Drepanosticta*, with the hinder margin of the thorax bilobed. Apparently an undescribed species.

Legion LESTES.

175. **LESTES WALLACEI* Kirby.

Lestes wallacei Kirby, Cat. Odonata, p. 162.

Lestes sp.

1 ♂. Matang Rd., 21.viii.20 (lacking head and end of abdomen).

Wings hyaline, but with smoky tinge, most marked at apex; petiolated up to level of Ac, which lies nearer Ax_2 than Ax_1 . M_2 commencing $8\frac{1}{2}$ –9 cells distal to nodus in fore-wing, $6\frac{1}{2}$ –7 cells in hinder-wing. None of the sectors angulose except Cu_2 . Prerostigma large, dilated, about four times as long as broad. One supplementary sector and vestige of a second interposed between M_2 and M_3 . Quadrangle broad, lower side twice as long as upper side; outer angle acute.

This interesting species shows distinct affinities to the Indo-Chinese *Orolestes*.

There are also amongst Major Moulton's material some three fragmentary specimens, all Agrionines, which are too imperfect to describe. They appear to be unnamed species. One is a *Pseudagrion*; a second is either a *Pseudagrion* or belongs to an allied genus; the third I cannot refer with certainty to any genus, though again it may be related to *Pseudagrion*.

I have omitted from the list certain common and widely-spread species which almost certainly occur in Borneo, but which have never yet been recorded from the island. These would add some ten species or so to the list.

Allowing for these broken or unrecorded species, we may, I think, assume that the list includes from between 70 to 80 per cent. of the total Dragonfly fauna of the island.

III. *Some Remarks on Geographical Distribution.*

Dragonflies are so important in this respect that a few notes are not out of place.

It is difficult to subdivide the Oriental Region in any entirely satisfactory way; but one may contrast the equatorial Dragonfly fauna, ranging from about the equator to roughly 10° N., with the tropical fauna lying mainly between 10° N. and 25° N. The equatorial fauna may be called the Malayan, the tropical (unless, indeed, that can be shown to consist of more than one fauna of co-ordinate importance) I label here the Indo-Chinese.

The Malayan fauna occupies as its main areas:—

- i. The Sondaic area—*i. e.*, the Malay Peninsula, Borneo, Sumatra, and Java.
- ii. The Philippine Islands.
- iii. The Celebes.

Any detailed analysis of the fauna of Malaya would extend this paper to undue length; hence I give only a very general table, and prefix "so far as I know" to the whole.

TABLE of distribution of genera found in Borneo.

I. Genera confined to Borneo.

Linæschna, *Pseudagrionoptera*, *Matronoides*, *Rhinoneura*, *Stenagrion*.

II. Genera specially characteristic of Malaya or confined there-
to (several of these occur in Indo-China).

Tetracanthagyna, *Amphiaschna*, *Orchithemis*, *Pornothemis*, *Brachygonia*, *Tyriobapta*, *Micromerus**, *Dysphæa*, *Devadatta*, *Podolestes*, *Rhinagrion*, *Caconeura*, *Amphicnemis*, *Pericnemis*.

III. Genera of Oriental distribution, with species confined to Sondaic area.

Orogomphus, *Onychothemis*, *Macromidia*, *Azuma*, *Idionya*, *Jagoria*, *Gomphidia*, *Leptogomphus*, *Macrogomphus*, *Microgomphus*, *Burmagomphus*, *Heterogomphus*, *Vestalis*, *Pseudophæa*, *Rhinocypha*, *Cæliccia*, *Copera*, *Disparoneura*.

IV. Genera common to Oriental and Australian Regions, with species confined to Sondaic area.

Agriionoptera, *Neurothemis*, *Brachydiplax*, *Lyriothemis*, *Camacinia*, *Aciagrion*, *Drepanosticta*, *Protosticta*.

V. Genera mainly Papuan or Australian, with species confined to Sondaic area.

Metaphya, *Oda*, *Raphisma*, *Teinobasis*.

VI. Palæotropical (*a*) or Holotropical (*b*) genera, with species confined to Sondaic area.

(*a*) *Ictinus*, *Tetrathemis*, *Rhyothemis*, *Æthriamanta*, *Pseudagrion*, *Ceriagrion*.

(*b*) *Gymacantha*.

VII. Special cases :—

Hylæothemis. Borneo, S. India, Ceylon.

Heliaschna. W. Africa, Malaya, Burma.

Macromia. Palæotropical, Palæartic, Nearctic.

Some negative characters showing contrast with Indo-Chinese Province :—

Absence of *Cordulegastrina*, relatively poor development of genera of *Calopterygina* and of *Brachytreron* series of *Æschvina*.

Relative scarcity of species of the following genera :—
Onychogomphus, *Lestes*, *Ischnura*, *Agriocnemis*.

Absence of *Davidius*, *Anisogomphus*, *Cyclogomphus*, *Gomphus*, *Pseudothemis*, *Sympetrum*, *Palpopleura sexmaculata*, *Bradynopyga*, *Anisopleura*.

Genera not mentioned in the above table have no species peculiar to the Sondaic area.

* *Micromerus* has 13 species in Malaya; one, *M. lineatus*, widely spread in Indo-Chinese province; and one, *M. finalis*, in Ceylon.